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L15: Entry 8 of 18

File: USPTO

Dec 1, 1997

1/16/98  
Patent  
Powder

DOCUMENT-IDENTIFIER: US 5695814 A

TITLE: Method of making a powdered biocidal composition

Detailed Description Paragraph Right (17):

In a hydrophilic material containing a tertiary amine (dimethylaminoacrylamide), N-methylacetamide and urea, an alpha.-amino ether and chlorite salt is formed when the iminium chlorite is stabilized. Any monomeric or oligomeric amide substituted plasticizer, such as succinamide, formamide, or N-methyl formamide, can be substituted for N-methylacetamide in order to soften the amine. Formamide and N-methyl formamide are toxic and would not be preferred in applications involving human contact. If the amine center is sufficiently mobile, the addition of a plasticizer is unnecessary. Urea improves the chlorine dioxide uptake and release efficiency of the hydrophilic material because it has a high hydrogen bonding density and will not react with the acid releasing agent. Compounds having a high amide concentration can also be used to improve hydrophilic material efficiency. Preferably, the composite comprises between about 5 wt. % and about 95 wt. % of the hydrophilic material and between about 5 wt. % and about 95 wt. % of the hydrophobic material. The hydrophilic material comprises between about 5 to about 30 wt. % of an amine and between about 70 and about 95 wt. % of a hydrophilic solvent including between about 35 and about 55 wt. % urea between about 35 wt. % and about 55 wt. % plasticizer and about 10 wt. % base. It has been found that not more than about 0.5 moles of chlorine dioxide per mole of amine should be added to the hydrophilic material or the stability of the material could be compromised.

Detailed Description Paragraph Right (49):

A preferred application includes a foot powder for preventing athlete's foot and other fungi. The powder can be applied directly on the surface of the foot or can be incorporated into a shoe insert. The composite can be applied between the cloth covering and foam pad of the shoe insert, impregnated within the foamed pad, or impregnated or coated on a shoe counter or upper lining. Chlorine dioxide generated from moisture within the shoe diffuses from the composite into the atmosphere to kill fungus and deodorize the shoe. The powder can be blended with conventional ingredients such as talc, cornstarch, fragrance, miconazole nitrate, tolnaftate silica, boric acid, aluminum chlorhydrate, salicylic acid, and cellulose. The powder can also be blended with other ingredients and used in bath powders or powders used in treating jock itch.

Detailed Description Paragraph Right (74):

Of these polymers, the last polymer has the most flexible amine containing side group and exhibited the most efficient uptake and release of chlorine dioxide in formamide that is a substantial improvement over that demonstrated with in-chain amines. The polymer was also soluble in molten urea.

Detailed Description Paragraph Right (81):

Up to 50 wt. % of the tertiary amine dimethylaminoacrylamide (DMAA) was added to hydrophilic solvent containing 50 wt. % urea and 50 wt. % n-methylacetamide (NMA) solvent at 50.degree. C. and quickly cooled to room temperature. The solution remained single phase indefinitely at room temperature. The same behavior was noted for the addition of 20 wt. % DMAA to a solvent containing 33 wt. % urea, 33 wt. % NMA and 33 wt. % sodium acetate, a solvent containing 35 wt. % urea, 55 wt. % NMA and 10 wt. % sodium methoxide, and a solvent containing 70 wt. % urea and 30 wt. % sodium acetate.

Detailed Description Paragraph Right (84):

35 wt. % urea/55 wt. % NMA/10 wt. % sodium methoxide exhibited the greatest chlorite salt stability in that complete release was noted after three days storage at

5.degree. C. Complete release was also noticed after 24 hours at room temperature. The presence of a strong inorganic base greatly improves the stability of the chlorite salt in urea based solvents.

Detailed Description Paragraph Right (86):

No decomposition was observed over the one hour heating period. Acrylamide alkene resonances were expected between 6-4 ppm yet none were seen. Some polymerization of the urea was revealed by the broad band under a sharp urea band at 6-7 ppm. The NMR obtained after heating at 120.degree. C. for two hours, much above the 50.degree. C. at which the DMAA was mixed into the urea based solvent, revealed extensive polymerization of the urea which was evident from the increase in line width and the complication in the urea resonance between 8 and 6 ppm. However, no alkene acrylamide resonances were seen. Thus, the 20% DMAA - 35 wt. % urea/55 wt. % NMA/10 wt. % sodium methoxide system produced no toxic alkene products.

Detailed Description Paragraph Right (87):

To avoid variability in chlorite stability from incomplete drying of the solvent, 40 wt. % of carefully dried urea (vacuum dried: 80.degree. C., 18 hours, 0.1 torr) and 60 wt. % NMA (CaO overnight reflux and distilled) were mixed and heated for 18 hours at 120.degree. C. Alkoxides were first isolated as dry powders by reacting the required amount of clean sodium metal with the alcohol and isolating the product by washing with diethyl ether. All mixing was carried out under dry nitrogen atmosphere. Predrying of the urea/NMA mixture resulted in room temperature stability of the iminium chlorite salts for at least one week at room temperature.

Detailed Description Paragraph Left (2):

Each of these compounds reacted with chlorine dioxide and later released it upon acidification in formamide, indicating that tertiary amine compounds with N-amido substitution of their primary and secondary amines can complex chlorine dioxide, when dissolved in a suitable hydrophilic solvent. Addition of urea to the formamide clearly improved the uptake and release efficiency.

Detailed Description Paragraph Table (1):

TABLE 1

Sodium Equiv.	Alkoxide.sup.a	% Amine.sup.b	ClO.sup.c	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	NaClO.sup.d	0	30-50
0.5	9 0 0 0 0 0 0 0 C1	7 20 0.5 9 4 0 0 0 0 0 .sup.	C1.sup.d	15 20 0.5 9 4 0 0 0 0									--	0 30-50
0 0	C2 23 20 0.5 9 8 7 7 7 6 6 5 i-C3	20 20 0.5 9 8 7 6 5 5 3 3 i-C3	31 27 0.5 9 9 8 7 7 6 6										0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
8 7 7 6 5 t-C4	16 30 0.5 9 8 7 4 4 2 2 1 t-C4	30 23 0.5 9 9 8 8 7 7 6 6												0.5 9 9 8 8 7 7 6 6
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Methyl and tbutyl alkoxides are commercial products. .sup.b Percentages are based on material already present in the mixture a that stage and not the final composite. .sup.c Based on amine .sup.d These experiments were done without predrying of the urea and NMA.

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## End of Result Set

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L12: Entry 10 of 10

File: USPT

Dec 26, 1995

DOCUMENT-IDENTIFIER: US 5478501 A

TITLE: Bathing composition containing coated cationic polymer

Brief Summary Paragraph Right (2):

Amine functionality-containing materials are commonly used in cosmetic and household products, including bathing preparations. Many products containing materials with amine functionalities (quaternary ammonium and amide moieties as well as materials with trace or greater quantities of amine) such as some liquid and solid soap, are used in everyday life. Other amine functionality-containing products include bath preparations such as bubble bath and bath powders and beads, and effervescent tablet compositions such as ActiBath.RTM.. Cationic cellulose, a quaternary ammonium-containing product, is one example of an amine functionality-containing material that is frequently included in such compositions due to the high quality "feel" or slipperiness it lends the product. The inclusion of cationic cellulose (polyquaternium 10, Polymer JR, Polymer LR, etc.) in products that are either alkaline in nature or used at an alkaline pH, generates amine-based volatile products.

Detailed Description Paragraph Right (12):

Carbonate salts can also be used in the amine functionality-containing coated composition of the present invention especially when preparing bathing preparations such as ActiBath.RTM., bubble bath, bath crystals, bath powder and the like. Examples include sodium carbonate, sodium bicarbonate, potassium hydrogencarbonate, potassium carbonate, calcium carbonate, magnesium carbonate, and sodium sesquicarbonate. These carbonates can be used either individually or in combinations of two or more thereof. The carbonates, when used, are of course added to the composition after coating of the amine functionality-containing material is completed. The coating forms a barrier between the material and the (alkaline) carbonate. The carbonates are present in an amount of 5-80%, 10-50% on a preferred basis.

Detailed Description Paragraph Right (22):

The final form of the amine functionality containing composition of the present invention includes tablets such as the currently marketed effervescent tablet ActiBath.RTM.; powders such as bath powders, granules such as bath beads; solid materials such as bar soap formulations; fabric softeners in combination laundry detergent/fabric softener products, suspensions and emulsions such as bubble bath, foaming milk bath, bath oils, shampoos and conditioners, etc. When prepared in the form of a soap or detergent, anionic surfactants and/or amphoteric surfactants are commonly employed.

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L13: Entry 1 of 24

File: USPT

Apr 9, 2002

DOCUMENT-IDENTIFIER: US 6369042 B1  
TITLE: Antioxidative vitamin B6 analogs

Detailed Description Paragraph Right (20):

Pantothenic acids' most important function is as an essential component in the production of coenzyme A, a vital catalyst that is required for the conversion of carbohydrates, fats, and protein into energy. Pantothenic acid is also referred to as an antistress vitamin due to its vital role in the formation of various adrenal hormones, steroids, and cortisone, as well as contributing to the production of important brain neuro-transmitters such as acetylcholine. In addition to helping to fight depression pantothenic acid also supports the normal functioning of the gastrointestinal tract and is required for the production of cholesterol, bile, vitamin D, red blood cells, and antibodies.

Detailed Description Paragraph Right (45):

In general, most cosmetic and pharmaceutical creams and lotions contain oils, waxes, lanolins, sterols, humectants, emollients, thickening agents, proteins, preservatives, emulsifiers, silicones and the like as would be appreciated by one of ordinary skill in the art.

Detailed Description Paragraph Right (46):

Numerous bath powders exemplified herein, are suitable for use in combination with the inventive compounds described herein. Such bath powders are preferably non-detergent with a pH close to neutral. In addition, capsular delivery vehicles, such as liposomes or time release delivery vehicles, preferably microcapsules, that contain the inventive compounds, and that are pH, temperature sensitive, or that dissolve in water or that are otherwise released are preferred for use herein. Upon contact with the warm water or with water of a particular pH the contents of the capsule or pellet will be released, preferably over time.

Detailed Description Paragraph Right (47):

Suitable bath powders and bubble baths and other bubble compositions for use in these combinations are well known to those of skill in the art [see, e.g., U.S. Pat. Nos.: 5,478,501; 4,565,647; 5,478,490; 5,412,118; 5,401,773; and many other examples]. These may be modified by adding the inventive compounds disclosed herein.

Detailed Description Paragraph Center (14):Bath Powders